

## Renewable Energy Veteran Shares His Perspectives on Current Energy Challenges & Opportunities

**I****N THE SPOTLIGHT** for this issue of *Currents* is Mr. Joseph Bryan, the newly-appointed Deputy Assistant Secretary of the Navy (DASN) for Energy. On Tuesday, February 10, 2015 Kenneth Hess, director of communication and outreach for the Chief of Naval Operations Energy and Environmental Readiness Division (CNO N45) and Bruce McCaffrey, managing editor of *Currents* magazine, sat down with Mr. Bryan in his Pentagon office to get his perspectives on the energy challenges facing the Navy today. Also joining in on the discussion was LT Chika Onyekanne from the U.S. Navy Chief of Information (CHINFO).

**CURRENTS:** For readers who may not be familiar with your background, please provide some insights into the positions you've held.

**BRYAN:** I started my career in New York working with the consumer, environmental, and business communities to create an environment that was conducive to the adoption of energy efficiency and renewable energy. We worked very hard to create a climate that was open to emerging technologies and the adoption of cost-effective applications of those technologies.

We worked very hard to create a climate that was open to emerging technologies and the adoption of cost-effective applications of those technologies.

Then, my wife and I moved to South Africa, and I went to work for the University of Cape Town's Energy and Development Research Center.

After a couple of years, I came back to Washington and spent most of the past 15 years on Capitol Hill. The majority of that time was spent working for Senator Carl Levin of Michigan, who was chairman of the Senate Armed Services Committee (SASC) for many years until he retired in 2014.



When Senator Levin established a team within the SASC staff to conduct independent investigations into issues before the committee, I came over from the Senate Intelligence Committee, where I had been working for him, to lead the group. I spent seven years doing long-term investigations into topics that were important to the chairman and the committee.

**CURRENTS:** And how did that work prepare you for your current assignment?

**BRYAN:** The Committee chairman and its ranking members set our priorities. Senator Levin's view was that some things required a deeper look—issues that may be fundamentally different than the way they appeared on the surface. He was focused on getting well-sourced, detailed answers to important questions facing the Department of Defense (DoD).

My wife finished law school in New York, and we decided to do something different.

That is the same approach I plan to take in my new job. I want us to focus on issues that are important to the Department of the Navy, drill down to understand them and come up with solutions that are both consistent with the mission and sustainable for the long term.

**CURRENTS:** Tell us a little about your tenure with the University of Cape Town's Energy and Development Research Center. Why Cape Town?

**BRYAN:** My wife finished law school in New York, and we decided to do something different. So we moved to South Africa. We chose South Africa because it was the late 1990s—an important period in the history of that country. The post-apartheid government had come into power in 1994. Nelson Mandela was elected president, and it was an exciting time to see a country that was transforming on many levels.

I ended up landing a job with the University of Cape Town at a center that focused on energy policy in sub-Saharan Africa. There weren't too many academic institutions which did that work at the time. The center set up a project to support South Africa's parliamentary portfolio committee on minerals and energy. I worked closely with the

incoming chairman and tried to act as a bridge between the committee and the technical experts in the energy arena.

**CURRENTS:** Did you work with the Navy or other parts of the military in the past? If so, what was that like?

## The Basics About Joseph M. Bryan

**JOSEPH M. BRYAN** was appointed as Deputy Assistant Secretary of the Navy for Energy in November 2014. Mr. Bryan serves as the Secretariat focal point on all matters pertaining to the Department of Navy's energy initiatives.

Mr. Bryan joined the Department of the Navy from the United States Senate where he served in several professional staff roles. Most recently, Mr. Bryan was the Investigations Team Lead for the Committee on Armed Services. During his tenure, the committee completed investigations into cyber intrusions affecting U.S. Transportation Command contractors, U.S. costs and allied contributions to support the U.S. military presence overseas, the presence of counterfeit electronic parts in the military supply chain, the use of private security contractors in Afghanistan, and the treatment of detainees in U.S. custody.

From 2005 to January 2007, Mr. Bryan served on the Select Committee on Intelligence, where he advised Senator Carl Levin on legal, policy, and programmatic issues affecting the U.S. intelligence community. He also represented Senator Levin in legislative negotiations and investigations into pre-Iraq war intelligence.

From 2001 to April 2005, he was responsible for legislative issues related to Senate Judiciary and Governmental Affairs Committees, including judicial nominations, criminal justice, legal reform, and federal employees.

Earlier in his career, Mr. Bryan worked at the University of Cape Town's Energy and Development Research Center, Cape Town, South Africa. In this position, he coordinated research and briefings for Chairman of the South African Parliamentary Portfolio Committee on Minerals and Energy on the development and regulation of domestic energy industries. He also advised Namibian Ministry of Minerals and Energy on the development of a white paper to guide development of national energy policy.

Mr. Bryan received a bachelor's of arts degree in 1991 from Fordham University and a master's of arts from the University of Delaware in Urban Affairs and Public Policy, with a focus on energy and environmental policy.

**BRYAN:** My experience with the DoD and the individual services largely comes from my work on SASC. Many of the issues we focused on impacted the acquisition process and getting hardware into the field. We looked at some matters that affected DoD as a whole, but often I dealt directly with representatives of the Army, Navy, Air Force and Marine Corps.

A good example is the committee's investigation into the presence of counterfeit electronic parts in the DoD supply chain. There is a massive overseas counterfeiting industry that sells to the U.S. defense industry. It's a challenge for all of the services and defense contractors to determine how best to distinguish real parts from counterfeits.

We discovered that counterfeit parts were in mission computers for Terminal High Altitude Area Defense (THAAD) missiles. We also found counterfeit parts that were used in the ice detection systems on some of our aircraft. These are the types of components that you really don't want to fail. So if you take a long, careful look at the problem—and with the committee's resources and personnel, we could—you can get to the root cause of the problem.

We were able to change the law to help the DoD keep its supply chain secure.

Over the course of the investigation—looking only at a small sample of the industry—we were able to identify more than a million counterfeit parts. We traced most of them back to China. What we at SASC were able to see, and what the DoD may have had a harder time seeing on its own, were vulnerabilities in the acquisition system that allowed counterfeit parts to be slipped into the supply chain. These vulnerabilities could be fixed, and some of the fixes were very simple.

At the end of that investigation, we were able to change the law to help the DoD keep its supply chain secure. Manufacturers and contractors are now subject to a higher level of scrutiny as they procure parts for the Department.

## The SECNAV's Energy Goals

**ENERGY IS CRITICAL** to the Department of the Navy's (DoN) ability to provide the global presence necessary to ensure stability, deter potential adversaries, and present options in times of crisis—wherever and whenever they might arise. In 2009, Secretary of the Navy Ray Mabus issued five aggressive goals aimed at transforming the DoN's energy use.

### 1. Increase Alternative Energy Use DoN-Wide

By 2020, 50 percent of total energy consumption will come from alternative sources.

- a. The DoN demonstrated certain alternative fuels to be effective drop-in replacements for conventional fossil fuels and qualified them to compete to supply fuel to the DoN through the Defense Logistics Agency Energy.

### 2. Increase Alternative Energy Ashore

By 2020, DoN will produce at least 50 percent of shore-based energy requirements from alternative sources.

- a. The DoN's Renewable Energy Program Office (REPO) is on target to have 1 Gigawatt of renewable energy—enough to power about 250,000 homes or 14 Arleigh Burke-class Destroyers—under procurement by 2016, at a price at or below brown power

### 3. Sail the "Great Green Fleet"

By 2012, DoN will demonstrate a Green Strike Group in local operations and sail it by 2016.

- a. The DoN demonstrated alternative fuel blends on all ships and aircraft that participated in the 2012 Rim of the Pacific (RIMPAC) exercise. Ship and air platforms operating on alternative fuel blends performed at full capability during the exercise. Planning is underway to deploy the Great Green Fleet 2016.

### 4. Reduce Non-Tactical Petroleum Use

DoN will reduce petroleum use in the commercial vehicle fleet by 50 percent.

- a. The DoN has significantly grown its fleet of alternative fuel-capable vehicles, is expanding its use of telematics to improve fleet performance, and is working to deploy zero-emissions vehicles.

### 5. Energy Efficient Acquisition

Evaluation of energy factors will be mandatory when awarding contracts for systems and buildings.

- a. DoN has issued policy guidance concerning the use of energy-related factors in acquisition planning, technology development, and source selections for platforms and weapons systems.



**CURRENTS:** What kind of cooperation did you get from the services?

**BRYAN:** Our working relationship with the services was generally quite good. It's not always easy to be asked hard questions. But the folks we worked with in the military and in the contracting community are loyal, patriotic Americans who want to do good things for the country. Nobody wants to have counterfeit parts in their airplanes, ships, or radar systems.

That's not to say the process of getting to a solution can't be difficult for those involved. When folks have been doing things the same way for a long time, it can be hard to change. But at the end of the day, we found that people want to know if they have a problem and how to fix it. At least then they can move forward with open eyes about the challenges they face.

I built some great relationships with people in the Navy and the other services. We tapped into some top notch in-house expertise on some of our investigations. We took a subject matter expert from the Naval Surface Warfare Center in Crane, Indiana to Hong Kong with us as part of our investigation into counterfeit parts because he was one of the best assets in the U.S. government to address that problem. The services cooperated with us. They wanted to get it right. I think we're all focused on that.

I don't think you can underestimate the value of leadership that says, "Let's look at this differently."

**CURRENTS:** Other senior leaders have stated that while technology is an important aspect of resolving our energy issues, it will take changes in individual behavior and organizational "culture" to get where we need to go. Your thoughts?

**BRYAN:** We all have been doing things a certain way for a long time in the energy space. Now, across the country and around the world, opportunities are emerging on the energy side which will enable us to do better. We have to be open to asking a different question or taking a different approach than we have in the past.

Thankfully, we have tremendous leadership support across the Navy, in Secretary Mabus who has set very aggressive energy goals, and Assistant Secretary of the Navy for Energy, Installations & Environment (ASN (EI&E)) McGinn who is focused on finding creative solutions to these problems. I don't think you can underestimate the value of leadership that says, "Let's look at this differently."

That message of "let's do this differently" has been coming from DoN leadership for years, and now it is finding its way into the conversations of the people executing important, mission-focused jobs for the Navy.

During my last visit to Norfolk, I met some Sailors from the USS Porter (DDG 78) who are doing some amazing work. They are asking questions about how they can use energy more efficiently, so they can spend more time on the mission and less time refueling. I talked with one of the USS Porter's navigators, who is doing some innovative thinking about how her ship can better use fuel while underway.

## The Basics About the USS Porter

**THE USS PORTER** is a guided missile destroyer and is part of the Atlantic Fleet homeported in Norfolk, Virginia. Named after two American naval legends—Commodore David Porter and his son, Admiral David Dixon Porter, DDG 78 is the fifth ship to bear the name Porter. Using the strategies and techniques provided by Naval Sea Systems Command's Shipboard Energy Conservation guide, the Porter achieved the 10th highest level of underburn in the Atlantic Fleet for the fourth quarter of fiscal year 2014.

USS Porter (DDG 78).  
MC1 Rafael Martie





Commanding Officer, CDR Blair H. Guy welcomes DASN Energy Joseph Bryan aboard the USS Porter (DDG 78) for a ship's tour and a briefing on energy conservation initiatives that the ship is undertaking to increase their combat capability and mission effectiveness. Captain Guy has empowered his crew to be innovative and think of process improvements that can conserve energy.

*MC2 Jonathan Donnelly*

We are working to increase the energy security and resiliency of our installations and surrounding communities.

She had looked at voyage planning from Norfolk to Florida, to find a way to accomplish the trip without refueling as often—to spend more time on mission and less time tied to an oiler. On her own time, she looked at navigational charts and weather reports, worked on some options with her crew, and charted a course to take advantage of the Gulf Stream current to use less fuel. And it worked.

What's most important in this story is that this young officer said "energy is important to us" and, on her own time, did something to make her mission more successful, more energy efficient. She did what was best for the mission. And her commanding officer said, "Do it," to empower her along the way. That is a challenge for

leaders in all organizations—to be open to doing things differently and challenging their own assumptions.

Energy is an area where there's a lot of room for innovation, a lot of room for new thinking. This doesn't mean you have to come up with a new technology—it can mean you pull out your old paper charts to find a better way.

**CURRENTS:** In your own words, what is the mission of the Office of the Deputy Assistant Secretary of the Navy (Energy)?

**BRYAN:** We are a driver for energy solutions, pushing innovation and building partnerships that advance the DoN's goal of optimizing energy use to enhance combat capability and energy security. The world is changing, and the DoN needs

to change with it so that we can continue to provide the presence necessary to ensure stability, deter potential adversaries, and provide options in times of crisis.

We will continue to face energy challenges both afloat and ashore that we need to overcome in order to complete the mission. The best course of action is for us to prepare for those challenges—by planning and making smart investments—so that we stay ahead of the changes in energy that are happening all around us.

**CURRENTS:** What are you thinking about in terms of infrastructure improvements?

**BRYAN:** Today, our shipyards and other shore installations play a greater role in accomplishing the mission than ever before. We are working to increase the energy security and resiliency of our installations and surrounding communities, by improving energy efficiency and diversifying our energy supplies. And, we're leveraging private sector financing to an unprecedented extent to accomplish those goals.



We're using energy savings performance contracts (ESPC) and utility energy services contracts (UESC) to improve our energy infrastructure. In UESCs and ESPCs, private companies buy and install efficient energy equipment on our bases and assure the equipment performance. In return for their investment, the Navy pays the companies a portion of the energy savings that result from replacing old, inefficient equipment with the new, more efficient equipment. These agreements are a win-win for the Department and the private sector.

**CURRENTS:** How about on the Marine Corps side? What aspects of their energy efforts would you like to mention?

**BRYAN:** The Marines are doing incredible work, particularly at forward operating bases (FOB). They know that the logistics to support fuel requirements at FOBs creates risks for them.

Colonel Caley (director of the Marine Corps Expeditionary Energy Office) tells a story about a line of trucks idling, before a particular exercise. He didn't think this made much sense. So he ran a test at Twenty-nine Palms with

two lines of trucks. For one line, he installed a simple meter that showed the Marines how much fuel they were burning. The second line of trucks had no such gauge. He didn't tell the Marines what to do. He simply gave them information that enabled them to make their own decisions. He found that the Marines who had the gauges realized a significant reduction in their fuel consumption.

If we can put our folks in a position to do what they know is right, with the right information, then they will make good decisions.

What this proves to me is that, like the navigator in Norfolk, with the right information, Sailors and Marines will make decisions to save energy while accomplishing their mission.

People join the Navy and Marine Corps because they want to serve and want to do the right thing. If we can put our folks in a position to do what they know is right, with the right information, then they will make good decisions.

**CURRENTS:** What do you think your major challenges will be, and what are your strategies for meeting those challenges?

**BRYAN:** One challenge is changing the way we think about problems. Challenging the assumptions we make. Opening ourselves up to good ideas that exist outside of our own organization. That's tough for any organization, particularly when you are talking about emerging technologies in the energy space. The fact remains that the world is changing, and there are people out there who are figuring it out. We need to learn from them.

## For More Details

**FOR MORE DETAILS** about one of the Navy's successes with a UESC at the Naval Undersea Warfare Center (NUWC) in Newport, Rhode Island, read our article "NUWC Newport Partners with National Grid to Tackle Energy Conservation: Annual Energy Savings of Plan Estimated at \$1.5 Million" in the summer 2014 issue of *Currents*.



## For More Insights

**FOR MORE INSIGHTS** into Colonel Caley's perspective, read our article "Spotlight on the Marine Corps Expeditionary Energy Office: Colonel James Caley Talks About Getting Energy Innovations into the Hands of Marines" in the summer 2014 issue of *Currents*.



Better, cleaner, cheaper—that's a pretty attractive option.

Energy is important, and it matters to the mission. I think that's part of the message that Sailors and Marines are getting from their senior leaders, and it's resonating with folks. So we're looking to solve the challenges we face by doing things differently when it makes sense. We are starting to see a culture where people are not only open to change but are agents of change themselves.

**CURRENTS:** What do you believe to be the most significant economic, security and environmental benefits of renewable energy?

**BRYAN:** Renewable energy at our installations can enhance energy security and increasing resiliency. Renewable assets on our installations can—in addition to producing clean, cost-competitive power—serve as a hedge against disruptions in the commercial grid. We know that the electrical grid is a target for cyberattacks, and we've seen how weather and natural events can

affect it. A photovoltaic array located on a Marine Corps base can help keep the base up and operating, even should the grid go down.

To that end, Secretary Mabus stood up the Renewable Energy Program Office. Bob Griffin and his REPO team are doing amazing work. We are entering into contracts for the purchase of renewable energy at prices that are equal to or below brown power, and we're on track to achieve our goal of 1 Gigawatt of renewable power by 2016.

Better, cleaner, cheaper—that's a pretty attractive option.

**CURRENTS:** As you know, we have several initiatives underway that focus on biofuels. What is your perspective on alternative fuels?

**BRYAN:** Using alternative fuels adds supply options, increasing freedom of action and reducing our vulnerability to those who would use energy as a weapon against us.

It's about increasing operational flexibility, and making sure that our platforms can use the fuel that's available. We don't know where our platforms will be operating in five or ten years, whether in combat, providing deterrence or rescuing victims of natural disasters.

We don't know where the next F-18 Super Hornet is going to be deployed or whose fuel tank it's going to be alongside. So, we need to make sure that aircraft can fly on whatever fuel is available—whether it's conventional petroleum or an alternative fuel.

In 2012, we proved during the Rim of the Pacific Exercise that our ships and aircraft could run on a blend of up to 50/50 drop-in alternative fuels and conventional fossil fuel. Since then, we've certified all our platforms on two alternative fuel pathways—called Highly Enriched Fuel Assembly and Fischer-Tropsch.

Any alternative fuels that we use must be "drop-in." In other words, our engines and supply equipment can't tell the difference between the alternative fuel and conventional fossil fuel. There can be no need for any modifications to systems.

Secretary Mabus has committed—and the law has been changed to require—that we will not purchase operational quantities of drop-in alternative fuels unless they are cost competitive with conventional fossil fuels.

Finally, being able to operate on alternative fuels reduces our dependence on oil-producing countries, some of which aren't always friendly to us. The investments we make today will develop a domestic alternative fuels production capability that is a national security imperative. It's a strategic investment into building a long-term capability.

We take the best that industry and academia have to offer and figure out how we can make it work for the Navy.

**CURRENTS:** The Secretary of the Navy talks about the fluctuation in international fuel prices and the impact that has on our operations. For example, if the expected price of fuel increases one dollar, it costs the Navy 30 million dollars which, by necessity, needs to come out of our operational budget one way or another. So if there is a domestic source of alternative fuels, is there some sense that it can be used to offset those costs in the future?

**BRYAN:** The fact is we can look at oil prices today, but it's anybody's guess where they'll be in a year. Two years ago, oil was 120 dollars a barrel. Today, it's closer to 40 dollars a barrel. You don't want to make long-term decisions based on short-term prices, especially when it comes to oil.

**CURRENTS:** Is your office working with industry or academia, and if so how?

**BRYAN:** CAPT Jim Goudreau is our Director of Policy and Partnerships, and he is focused on building partnerships with the private sector and academia. Secretary Mabus and ASN (EI&E) McGinn both encourage us to widen our aperture to get outside perspectives. So we take the best that industry and academia have to offer and figure out how we can make it work for the Navy.

We're working with a number of universities—Columbia, Purdue, Arizona State, and others—and we have partnerships with the private sector to develop new technologies and adopt new approaches that will address our energy challenges. We need to know what

F/A-18F Super Hornet strike fighter fueled with a 50/50 blend of biofuel and conventional fuel.

Liz Goettee



they're doing, how they're doing it, and then adopt the technologies and practices that make sense for us. It's a great way to generate new ideas about how to approach a persistent challenge.

**CURRENTS:** Could you speak briefly about the way forward for the Department of the Navy from an energy standpoint?

**BRYAN:** We are transforming the Department of the Navy's energy use to make us better warfighters, deploying next-generation capabilities that boost combat effectiveness, maximize strategic options, and better protect our Sailors and Marines.

Efficient energy use is a force multiplier. It can help us go farther on a tank of gas, stay longer without needing resupply or peeling back to refuel, and to deliver more payload when we're there. At the same time, diversifying our energy sources—using conventional fuels, alternative fuels and renewable energy—can improve our energy security and resiliency ashore and give operational commanders and planners the flexibility they need to complete the mission. And that's what it's all about.

**CURRENTS:** Thank you for taking the time to speak with us today, sir.

**BRYAN:** Glad to do it. Thank you. 📌